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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/551,276	04/18/2000	Paul A. Underbrink	50321-1020	1990

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EXAMINER

LUGO, DAVID B

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 08/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/551,276

Applicant(s)

UNDERBRINK ET AL.

Examiner

David B. Lugo

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-58 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 April 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

Page 2, line 26, "GPS receiver 200" should be --GPS receiver 10--.

Appropriate correction is required.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-3, 5-22 and 24-58 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-11, 14-23, 26-35, 38-43, 46, 47 and 50-66 of copending Application No. 09/551,802 in view of Krasny et al. U.S. Patent 6,563,861.
4. Regarding claim 1 of the instant application, claim 1 of copending Application '802 teaches a method for a spread spectrum detector comprising all the limitations of claim 1 of the instant application, except for the use of a fast Fourier transform to generate the second correlation values. Krasny et al. teach the use of a fast Fourier transform for performing correlation in the frequency domain (col. 5, line 65 to col. 6, line 9). It would have been obvious

Art Unit: 2634

to one of ordinary skill in the art to use the teaching of Krasny et al. to use a fast Fourier transform to perform correlation in the frequency domain in the spread spectrum detector method of application '802 as a matter of design choice.

5. Further, all the limitations of claims 2, 3 and 5-12 of the instant application are taught by claims 2-11 of copending Application '802, respectively.

6. Regarding claim 13 of the instant application, claim 14 of copending Application '802 teaches a spread spectrum detector comprising all the limitations of claim 13 of the instant application, except for the use of a fast Fourier transform to generate the second correlation values. Krasny et al. teach the use of a fast Fourier transform for performing correlation in the frequency domain (col. 5, line 65 to col. 6, line 9). It would have been obvious to one of ordinary skill in the art to use the teaching of Krasny et al. to use a fast Fourier transform to perform correlation in the frequency domain in the spread spectrum detector of application '802 as a matter of design choice.

7. Further, all the limitations of claims 14-22 of the instant application are taught by claims 15-23 of copending Application '802, respectively.

8. Regarding claim 24 of the instant application, claim 26 of copending Application '802 teaches a spread spectrum detector comprising all the limitations of claim 24 of the instant application, except for the use of a fast Fourier transform to generate the second correlation values. Krasny et al. teach the use of a fast Fourier transform for performing correlation in the frequency domain (col. 5, line 65 to col. 6, line 9). It would have been obvious to one of ordinary skill in the art to use the teaching of Krasny et al. to use a fast Fourier transform to

Art Unit: 2634

perform correlation in the frequency domain in the spread spectrum detector of application '802 as a matter of design choice.

9. Further, all the limitations of claims 25-33 of the instant application are taught by claims 27-35 of copending Application '802, respectively.

10. Regarding claim 34 of the instant application, claim 38 of copending Application '802 teaches a computer readable medium having a program comprising all the limitations of claim 34 of the instant application, except for the use of a fast Fourier transform to generate the second correlation values. Krasny et al. teach the use of a fast Fourier transform for performing correlation in the frequency domain (col. 5, line 65 to col. 6, line 9). It would have been obvious to one of ordinary skill in the art to use the teaching of Krasny et al. to use a fast Fourier transform to perform correlation in the frequency domain in the program of application '802 as a matter of design choice.

11. Further, all the limitations of claims 35-41 of the instant application are taught by claims 39-43, 46 and 47 of copending Application '802, respectively.

12. Regarding claims 42-58 of the instant application, claims 50-66 of copending Application '802 teach all the limitations of claims 42-58 of the instant application, respectively, except for the use of a fast Fourier transform to generate the second correlation values. Krasny et al. teach the use of a fast Fourier transform for performing correlation in the frequency domain (col. 5, line 65 to col. 6, line 9). It would have been obvious to one of ordinary skill in the art to use the teaching of Krasny et al. to use a fast Fourier transform to perform correlation in the frequency domain in the receiver of application '802 as a matter of design choice.

This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

14. Claims 1, 2, 4, 6, 9, 11-14, 17, 20, 22-25, 28, 31, 33-35, 38 and 41 are rejected under 35 U.S.C. 102(e) as being anticipated by Krasny et al.

15. Regarding claims 1, 13, 24 and 34, Krasny et al. teach a Doppler spread estimation system that may take the form of a hardware embodiment or a software embodiment (col. 6, lines 61-64), where a spread spectrum signal is received by radio receiver 16, a first correlation is performed by multiplier 26 (Fig. 4), a plurality of second correlation values are generated from the first correlation values via the multiplier of processing block 32, using a fast Fourier transform (see col. 5, line 60 to col. 6, line 19), where the second correlation values are phase shifted according to Doppler spread values $f_d(m)$, and the second correlation values are combined via the combiner of processing block 32 to generate third correlation values, which indicate the degree of correspondence of the code with the signal.

16. Regarding claims 2, 14, 25 and 35, Krasny et al. further show that multiple Doppler spread values are used in processing block 32, where one of the code phases is determined to correspond to the signal based on the third correlation values applied to max function block 34.

17. Regarding claims 4 and 23, the first correlation values are considered to be stored and communicated to logic 30 that implements the fast Fourier transform.

Art Unit: 2634

18. Regarding claims 6, 17, 28 and 38, Krasny et al. state the coherent detection is the preferred type of detection (col. 2, lines 62-64).

19. Regarding claims 9, 12, 20 and 31, Krasny et al. state that the Doppler spread estimation system may take the form of an entirely software embodiment using DSPs (col. 6, lines 61-64).

20. Regarding claims 11, 22, 33 and 41, the signal is modulated with a repeating code (col. 3, lines 49-67).

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Wiedeman et al. U.S. Patent 5,859,874 teach the equalization to zero of Doppler frequency shifts and phase shifts in a CDMA receiver.
- b. Lin U.S. Patent 6,167,347 teaches the removal of Doppler shift modulated on a GPS satellite signal.
- c. Gronemeyer U.S. Patent 6,577,271 discloses a signal detector having a correlator comprising a multiplier and an integrator.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David B. Lugo** whose telephone number is (703) 305-0954.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Stephen Chin**, can be reached at (703) 305-4714.

Art Unit: 2634

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

P.O. Box 1450

Alexandria, VA 22313-1450

or faxed to:


(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

dbl

7/30/03



STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
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